

Compact Infrared Radiometer in Space (CIRiS)

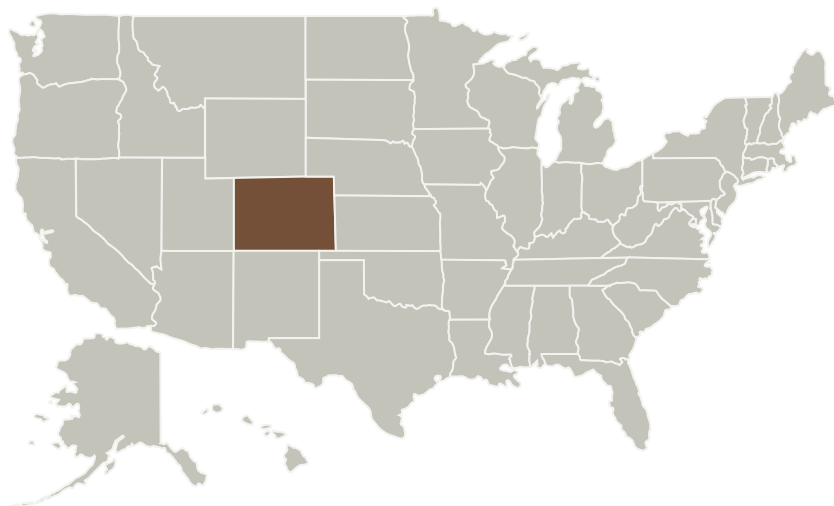
Completed Technology Project (2016 - 2018)



Project Introduction

The Compact Infrared Radiometer in Space (CIRiS) is an uncooled imaging infrared (7.5 μm to 13 μm) radiometer designed for high radiometric performance from LEO on a Cubesat spacecraft. The CIRiS design is based on a Ball aircraft-mounted instrument with modifications to improve radiometric uncertainty in the space environment. A high-emissivity blackbody source coated with carbon nanotubes reduces error in on-board calibration. Algorithms compensate the detector signal for changing external temperatures addressing another source of uncertainty. The CIRiS mission will enable constellations of simple, inexpensive Cubesats to replace larger more complex instruments for multiple applications in scientific research and land use management.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Ball Aerospace & Technologies Corporation	Supporting Organization	Industry	Boulder, Colorado

Primary U.S. Work Locations

Colorado



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Organizational Responsibility

Responsible Mission Directorate:

Science Mission Directorate (SMD)

Responsible Program:

In-space Validation of Earth Science Technologies

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Project Management

Program Director:

Pamela S Millar

Program Manager:

Sachi Babu

Principal Investigator:

David P Osterman

Co-Investigators:

Susan Novelli

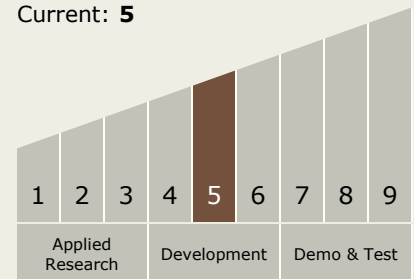
William Good

Sandra Collins

Technology Maturity (TRL)

Start: 5

Current: 5



Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.4 Microwave, Millimeter-, and Submillimeter-Waves

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Target Destination

Earth